



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/696,847	10/30/2003	Simon Dodd	100200768-1	8098

22879 7590 02/09/2007  
HEWLETT PACKARD COMPANY  
P O BOX 272400, 3404 E. HARMONY ROAD  
INTELLECTUAL PROPERTY ADMINISTRATION  
FORT COLLINS, CO 80527-2400

EXAMINER

DO, AN H

ART UNIT PAPER NUMBER

2853

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	02/09/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

## Office Action Summary

Application No.

10/696,847

Applicant(s)

DODD ET AL.

Examiner

An H. Do

Art Unit

2853

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 13 November 2006.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-18 and 20-36 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 7-18 is/are allowed.
- 6) ☒ Claim(s) 1-6, 20, 21, 23-25, 27, 28, 30, 31 and 33 is/are rejected.
- 7) ☒ Claim(s) 22, 26, 29, 32 and 34-36 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- ☐ Notice of Informal Patent Application
- ☐ Other: \_\_\_\_\_

### **DETAILED ACTION**

The Response filed on 13 November 2006 has been acknowledged.

#### ***Election/Restriction***

1. Applicant's election with traverse of Species C, claims 20-36 in the reply filed on 13 November 2006 is acknowledged. The traversal is on the ground(s) that the reason of "different geometric measurements" does not appear as a valid reason under MPEP 808.01 and does not prove that the identified species are independent and distinct. None of the claims recite measurements, thus the reasons for restriction do not apply. This is found persuasive and hence, the restriction requirement between groups A, B and C as set forth in the Office action mailed on 11 October 2006 is hereby withdrawn.

#### ***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1-6 and 20, 21, 23, 25, 27, 28, 30, 31 and 33 are rejected under 35 U.S.C. 102(e) as being anticipated by Dodd et al (US 6,543,883).

The applied reference has a common assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome

either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

Dodd et al disclose the following claimed features:

Regarding claim 1, a fluid ejection device (Figures 1-4) comprising: a first heater element (56); a second heater element (56) vertically spaced a first distance (spacing between heaters 56) from the first heater element (56); a first drive transistor (85) associated with the first heater element (56); and a second drive transistor (85) associated with the second heater element (56), the second drive transistor (85) vertically spaced a second distance (spacing between transistors 85) from the first drive transistor (85), the second distance being different than the first distance (Figure 8 shows the distance between heaters 56 is less than the spacing between transistors 85); and a power bus (81-83) electrically connected to contacts of the first drive transistor (85), and being a protective layer covering the contacts of the first drive transistor.

Regarding claims 2 and 4, wherein the first distance is greater than or smaller than the second distance (Figure 8).

Regarding claim 3, further comprising a primitive group of drive transistors (81) including the first and second transistors (85).

Regarding claim 5, further comprising a first primitive group of drive transistors (81) and an adjacent second primitive group of drive transistors (82), wherein the first

primitive group comprises the first drive transistor (85) and the second primitive group comprises the second drive transistor (85).

Regarding claim 6, wherein the first distance is a heater element centerline-to-centerline spacing (centerline of heater elements 56), and the second distance is a transistor center-to-centerline spacing (centerline of transistors 85) (Figures 6A, 6B and 8).

Regarding claim 20, a fluid ejection device (Figures 1-4) comprising: a vertical column of firing heater elements (61) and a vertical column of associated drive transistors (81); wherein a first firing heater element (56) of the vertical column of firing heater elements (56) is vertically separated centerline-to-centerline by a first distance (distance between the heaters 56 and transistor 85) from an associated first drive transistor (Figure 6A); and an adjacent second firing heater (56) element of the vertical column of firing heater elements (56) is vertically separated centerline-to-centerline by a second distance (distance between the heaters 56 and transistor 85) from an associated second drive transistor (Figure 6B), wherein the first distance and second distance are different (Figures 6A and 6B).

Regarding claim 21, further comprising: a primitive group (array 61) comprising a plurality of firing heater elements (56) of the vertical column of firing heater elements and a plurality of associated drive transistors (85) of the vertical column of drive transistors; wherein the primitive group comprises the first and second firing heater elements (56) and the associated first and second drive transistors (85) (Figure 8).

Regarding claim 23, wherein the plurality of firing heater elements (56) of the primitive group (array 61) are uniformly spaced from each other by a distance  $V1$  and the plurality of drive transistors (85) are uniformly spaced from each other by a distance  $V2$ , the distance  $V2$  being less than  $V1$  (Figure 8).

Regarding claim 25, further comprising: a primitive group comprising the vertical column of firing heater elements (56) and the vertical column of drive transistors (85); a power bus (81) associated with the primitive group (array 61) and electrically connected to provide a common power source for all of the plurality of drive transistors (85); wherein the primitive group comprises the first and second firing heater elements (56) and the associated first and second drive transistors (85) (Figures 6A, 6B and 8).

Regarding claims 27, 30 and 33, wherein the plurality of firing heater elements (56) of the primitive group are uniformly spaced a distance  $V1$  and the plurality of drive transistors (85) are uniformly spaced a distance  $V2$  (Figure 8).

Regarding claim 28, wherein the power bus (81) has a perimeter defining an area, the plurality of drive transistors (85) each has contacts and the contacts of the plurality of drive transistors are all enclosed within the perimeter (Figures 6A, 6B and 8).

Regarding claim 31, further comprising: a first primitive group (array 61) comprising a first plurality of firing resistors (56) of the column of firing resistors and a first plurality of associated drive transistors (85) of the column of drive transistors; an adjacent second primitive group (array 62) comprising a second plurality of firing heater elements (56) of the column of firing heater elements and a second plurality of drive transistors (85) of the column of drive transistors; first and second electrical power

Art Unit: 2853

buses (81, 82), each power bus associated with the drive transistors (85) of the first or second primitive group respectively and electrically connected to the first or second plurality of drive transistors of the respective first or second primitive group respectively and electrically isolated from the other power bus (Figures 3, 4A and 4B).

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over Dodd et al (US 6,543,883) in view of Burke et al (US 6,102,528).

Dodd et al disclose the claimed invention except for reciting the distance V1 provides a fluid ejection device resolution of 1200 dots per inch.

Burke et al teach the distance V1 provides a fluid ejection device resolution of 1200 dots per inch (column 4, lines 37-41).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have the distance V1 providing a fluid ejection device resolution of 1200 dots per inch, as taught by Burke et al into Dodd et al, for the purpose of providing high resolution printing.

***Response to Arguments***

6. Applicant's arguments with respect to claims 1-6 and 20-36 have been considered but are moot in view of the new ground(s) of rejection. The newly found

Art Unit: 2853

reference of Dodd et al (US 6,543,883) discloses the claimed invention as shown above.

***Allowable Subject Matter***

7. Claims 7-18 are allowed over prior arts as discussed in Applicant's Remarks filed on 02 February 2006.
8. Claims 22, 26, 29, 32 and 34-36 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Contact Information***

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to An H. Do whose telephone number is 571-272-2143. The examiner can normally be reached on Monday-Friday (Flexible).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen D. Meier can be reached on 571-272-2149. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2853

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

AD  
February 5, 2007



An H. Do  
Primary Examiner  
Art Unit 2853